

REMARKS

Initially, Applicants would like to express their appreciation to the Examiner for the detailed Official Action provided, for the indication that Applicants' drawings are acceptable, for the acknowledgment of Applicants' Information Disclosure Statement by return of the Form PTO-1449, and for the acknowledgment of Applicants' Claim for Priority and receipt of the certified copy of the priority document in the Official Action.

Upon entry of the above amendments, claims 4, 9 and 15 will have been amended. Claims 1-17 are currently pending. Applicants respectfully requests reconsideration of the outstanding rejections, and allowance of all the claims pending in the present application.

Applicants initially note that claims 4, 9 and 15 have been amended to remove means-plus-function format terminology.

Applicants also note that U.S. Patent No. 6,735,973 and U.S. Patent Application Publication No. 2004/0134215 have not yet been made of record, although the Examiner has applied these documents against the claims in the Official Action. Accordingly, Applicants respectfully request that the Examiner make U.S. Patent No. 6,735,973 and U.S. Patent Application Publication No. 2004/0134215 of record by citing them in a Form PTO-892 in the next Official Action.

On pages 2 and 3 of the Official Action, claims 1, 2 and 10-13 were rejected under the judicially created doctrine of "obviousness-type" double patenting over claims 1-20 of U.S. Patent No. 6,735,973 to LEE, in view of U.S. Patent No. 5,937,665 to KIESSEL et al. The Examiner appears to take the position that claims 1, 2 and 10-13 of the present application are similar to claims 1-20 of LEE, but that the claims of LEE do not include a device for shutting off introduction of the refrigerant into the distributors connected to inoperative indoor units (as recited in the last two lines of claim 1 of the present application), much less in the form of an ON/OFF valve (as recited in claim 2 of the present application). However, the Examiner appears to take the position that KIESSEL et al. teaches the use of a shut-off ON/OFF valve (column 1, lines 39-40), and that in view of such teachings it would have been obvious to one having ordinary skill in the art to modify the claims of LEE to add a shut-off ON/OFF valve in order to preserve energy and resources when cooling is not needed.

Applicants respectfully traverse the rejection of claims 1, 2 and 10-13 under "obviousness-type" double patenting.

As an initial matter, Applicants note that the Examiner has failed to state any reason as to why the removal of any of the limitations of the system set forth in the independent claim 1 of LEE would have been obvious to one of ordinary skill in the art. For example, Applicants note that claim 1 of LEE recites that the "outdoor unit" includes

“a plurality of outdoor valves mounted on the outdoor pipelines for controlling refrigerant flow” (lines 5-7), and that the “distributors” each include “a gas-liquid separator for separating refrigerant from the outdoor unit into gas refrigerant and liquid refrigerant”.

Applicants submit that claims 1, 2 and 10-13 of the present application (and in particular independent claim 1) do not recite either of the above noted features which are recited in the independent claim 1 of LEE. Accordingly, Applicants submit that, for at least this reason, claims 1, 2 and 10-13 of the present application are clearly different in scope, and clearly directed to different subject matter, than the claims of LEE. Further, because the Examiner has provided no motivation for removal of such limitations from the system set forth in the independent claim 1 of LEE, Applicants submit that the rejection under "obviousness-type" double patenting is clearly improper on its face, for at least this reason.

Applicants further note, as is apparently acknowledged by the Examiner, that the claims of LEE do not include “a device for shutting off introduction of the refrigerant into the distributors connected to inoperative indoor units” (as recited in the last two lines of claim 1 of the present application), much less in the form of “an ON/OFF valve” (as recited in claim 2 of the present application). However, contrary to the Examiner’s apparent position, Applicants submit that it would not have been obvious to one of ordinary skill in the art to modify the claims of LEE to add such a “device for shutting

off”, much less in the form of an “ON/OFF valve”.

In this regard, Applicants submit that, contrary to the Examiner’s apparent position, KIESSEL et al. lacks any disclosure of a shut-off ON/OFF valve which stops introduction of refrigerant into distributors connected to inoperative indoor units. Rather, Applicants submit that the portion of KIESSEL et al. which the Examiner noted (i.e., column 1, lines 39-40: “Air conditioning units operate only to cool indoor air, and are typically shut-off when cooling is not desired.”) is clearly directed to *shutting-off an entire air conditioning unit*. Accordingly, Applicants submit that KIESSEL et al. provides no teaching of a device for *shutting off introduction of refrigerant into distributors connected to inoperative indoor units*. In other words, KIESSEL et al. lacks any disclosure of a device, or ON/OFF valve, which shuts off refrigerant flow only to distributors of indoor units which are not in operation (i.e., without shutting down the entire air conditioning system/unit).

Applicants further submit that the multi-type air conditioner system as claimed in LEE and the single air conditioning unit as disclosed in KIESSEL et al. are non-analogous systems. In particular, the single air conditioning unit of KIESSEL et al. clearly does not require the operation of plural indoor units, and therefore is not concerned with plural distributors, or shutting-off refrigerant flow to only selective distributors. Accordingly, Applicants submit that one of ordinary skill in the art would

not have looked to a single air conditioning unit, such as KIESSEL et al., for teachings regarding a multi-type air conditioner system, such as that claimed in LEE.

Accordingly, Applicants submit that, not only does KIESSEL et al. lack any disclosure of the subject matter missing from the claims of LEE (as explained above), but further, that one of ordinary skill in the art would not have even looked to a single air conditioning unit such as KIESSEL et al. for teachings regarding refrigerant flow control in a multi-type air conditioner system, such as that claimed in LEE.

Accordingly, Applicants submit that it would not have been obvious to one of ordinary skill in the art to modify the claims of LEE as suggested by the Examiner. Applicants further submit that such modifications are clearly the result of impermissible hindsight reasoning based upon the disclosure of the present application, rather than the teachings of the references themselves (such as KIESSEL et al.).

Applicants further note that the claims of LEE also lack recitation of at least the following features which are recited in dependent claims 10-13 of the present application, and that the Examiner has provided no explanation regarding such deficiencies:

a first connection pipeline, second connection pipeline and third connection pipeline as recited in claim 10;

a guide piping system and valve bank as recited in claim 11;

a high pressure liquid refrigerant connection pipeline, high pressure liquid

refrigerant branch pipelines, a high pressure gas refrigerant connection pipeline, high pressure gas refrigerant branch pipelines, a low pressure gas refrigerant connection pipeline, and low pressure gas refrigerant branch pipelines as recited in claim 12; and

selection valves on the high pressure gas refrigerant branch pipelines and the low pressure gas refrigerant branch pipelines as recited in claim 1.

Applicants respectfully submit that the rejection of claims 1, 2 and 10-13 under "obviousness-type" double patenting is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection under "obviousness-type" double patenting, and an early indication of the allowance of all of the pending claims.

On page 3 of the Official Action, claims 3-9 and 14-17 were rejected under the judicially created doctrine of "obviousness-type" double patenting over claims 1-20 of U.S. Patent No. 6,735,973 to LEE, in view of U.S. Patent No. 5,937,665 to KIESSEL et al., and further in view of U.S. Patent Application Publication No. 2004/0134215 to PARK et al. The Examiner appears to take the position that claims 1-20 of LEE, as modified by the teachings of KIESSEL et al. in the previous rejection, only lack a supercooling device. However, the Examiner appears to take the position that PARK et al. teaches the use of a supercooling device (element 70 in Fig. 1), and that in view of such teachings it would have been obvious to one having ordinary skill in the art to

modify the claims of LEE to add a supercooling device in order to supercool the refrigerant supplied to the evaporator and improve the cooling capacity of the system.

Applicants respectfully traverse the rejection of claims 3-9 and 14-17 under "obviousness-type" double patenting.

As an initial matter, Applicants submit that U.S. Patent Application Publication No. 2004/0134215 to PARK et al. does not constitute prior art under 35 U.S.C. §103(c), and therefore can not properly be used as a prior art teaching under "obviousness-type" double patenting. In this regard, Applicants note that U.S. Patent Application Publication No. 2004/0134215 and the present application are commonly assigned to LG Electronics Inc. Further, Applicants note that the foreign priority date of the present application (i.e., January 16, 2003) pre-dates the U.S. filing date (October 14, 2003) of U.S. Patent Application Publication No. 2004/0134215.

Applicants further submit that the teachings of PARK et al. do not cure the above-noted deficiencies in the subject matter of the claims of LEE and the teachings of KIESSEL et al., as discussed above with regard to claims 1, 2 and 10-13. In this regard, Applicants note that the claims of LEE also lack the ON/OFF valve as recited in independent claim 14 of the present application.

Applicants further submit that it would not have been obvious to one of ordinary skill in the art to modify the claims of LEE to add such a supercooling device. Applicants

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submit that such modification is clearly the result of impermissible hindsight reasoning based upon the disclosure of the present application, rather than the teachings of the references themselves (such as PARK et al., which does not qualify as prior art).

Applicants further note that the claims of LEE also lack recitation of several features recited in dependent claims 3-9 and 15-17 of the present application, and that the Examiner has provided no explanation regarding such deficiencies.

Applicants respectfully submit that the rejection of claims 3-9 and 14-17 under "obviousness-type" double patenting is improper at least for each and certainly for all of the above-noted reasons. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection under "obviousness-type" double patenting, and an early indication of the allowance of all of the pending claims.

SUMMARY AND CONCLUSION


Entry and consideration of the present amendment, reconsideration of the outstanding Official Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate.

Applicants have made a sincere effort to place the present application in condition for allowance and believe that they have now done so.

Any amendments to the claims that have been made in this amendment, which do not narrow the scope of the claims, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered cosmetic in nature, and to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should there be any questions or comments, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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